PATENT USSN: 10/564,556

Atty Dkt: 034225.002

## **AMENDMENT**

## IN THE CLAIMS:

Please amend the claims as follows:

- 1. (Currently amended) A proton-conducting polymer membrane wherein 1 to 40 parts by weight of ionomer/solid proton conductor <u>having sulfoalkyl or sulfoaryl groups inserted in metal</u> phosphate layers of the ionomer/solid proton conductor wherein the metal is a group IV metal is dispersed in 100 parts by weight of proton-conducting polymer having proton-exchanging groups in side chain.
- 2. (Original) The proton-conducting polymer membrane of claim 1, wherein said proton-exchanging group is selected from the group consisting of sulfonic acid, carboxylic acid, phosphoric acid, phosphoric acid and derivatives thereof.

## 3-4. (Canceled)

5. (Currently amended) The proton-conducting polymer membrane of <u>claim 3 claim 1</u>, wherein said ionomer/solid proton conductor is a compound selected from the group consisting of compounds represented by the following Chemical Formula 1:

 $M(O_3PCH_3)_2$ ,  $M(O_3PCH_2OH)_2 \cdot H_2O$ ,  $M(O_3PCH_2COOH)_2$ ,

 $M(O_3P(CH_2)_4COOH)_2$ ,  $M(O_3P(CH_2)_5COOH)_2$ ,  $M(O_3PCH_2SO_3H)_2$ ,

 $M(O_3P(CH_2)_2SO_3H)_2$ ,  $M(O_3POH)(O_3PC_2H_4COOH) •nH_2O$ ,

 $M(O_3POH)_x(O_3PC_2H_4COOH)_v \cdot nH_2O$ ,  $M(O_3POH)_x(O_3PC_2H_4COOH)_v$ ,

 $M(O_3PC_2H_5)_x(O_3PC_6H_4SO_3H)_y$ • $nH_2O$ ,  $M(O_3CH_2OH)_x(O_3PC_6H_4SO_3H)_y$ • $nH_2O$  Chemical Formula 1 wherein M is a group IV element selected from Zr, Ti, Ce, Th and Sn; x+y=2; and n is a real number in the range from 0 to 20.

6. (Original) The proton-conducting polymer membrane of claim 1, wherein said proton-conducting polymer membrane has a thickness ranging from 30 to 125 μm.

PATENT USSN: 10/564,556 Atty Dkt: 034225.002

7. (Withdrawn, Currently amended) A method of preparing a proton-conducting polymer membrane according to claim 1, comprising the steps of:

- 1) dissolving a proton-conducting polymer having proton-exchanging groups in side chain in an organic solvent to prepare a 5 to 10 wt % proton-conducting polymer solution;
- 2) dispersing a ionomer/solid proton conductor in an organic solvent to prepare a 5 to 10 wt % ionomer/solid proton conductor solution;
- 3) mixing said proton-conducting polymer solution and said ionomer/solid proton conductor solution, so that 100 parts by weight of proton-conducting polymer is mixed with 1 to 40 parts by weight of ionomer/solid proton conductor; and
  - 4) preparing a polymer membrane using said mixture solution.
- 8. (Withdrawn) The method of preparing a proton-conducting polymer membrane of claim 7, wherein said organic solvent is one or more compounds selected from the group consisting of N-methyl-2-pyrrolidinone (NMP), dimethylformamide (DMF), dimethylacetamide (DMA), tetrahydrofuran (THF), dimethylsulfoxide (DMSO), acetone, methyl ethyl ketone (MEK), tetramethylurea, trimethylphosphate, butyrolactone, isophorone, carbitol acetate, methylisobutylketone, n-butyl acetate, cyclohexanone, diacetone alcohol, diisobutyl ketone, ethyl acetoacetate, glycol ether, propylene carbonate, ethylene carbonate, dimethylcarbonate and diethyl carbonate.
- 9. (Currently amended) A membrane-electrode assembly using the proton-conducting polymer membrane of any one of claims 1 to 6 1, 2, 5 and 6.
- 10. (Original) A fuel cell containing the membrane-electrode assembly of claim 9.